

Severe intra-abdominal haemorrhage: a consequence of two coinciding events

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ABSTRACT

Idiopathic thrombocytopenic purpura, an immune-mediated disease, usually has a relatively benign clinical course. Bleeding manifestations are mostly mucocutaneous and mild. Massive haemorrhages requiring transfusions or other interventions are rare, unless platelet counts are extremely low or other complicating conditions coexist. The rupture of an ovarian follicle is a very common benign condition in women of the reproductive age group. Any associated bleeding is unlikely to be significant, unless there is an underlying severe haemostatic derangement. We describe a 24-year-old Filipino woman presenting with severe abdominal pain and intra-abdominal haemorrhage requiring laparotomy, which revealed massive haemoperitoneum and a ruptured ovarian follicle. She had thrombocytopenia secondary to previously undiagnosed idiopathic thrombocytopenic purpura. This case illustrates how a combination of two otherwise common and benign clinical entities can result in a rare and potentially life-threatening event.

Keywords: haemoperitoneum, idiopathic thrombocytopenic purpura, ovarian follicle rupture, thrombocytopenia

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INTRODUCTION

Idiopathic thrombocytopenic purpura (ITP) is an immune-mediated disease that is caused by antibody-mediated platelet destruction with a normal bone marrow. It is a heterogeneous group with distinct acute and chronic forms. Acute ITP, typically a disease of children, has an abrupt onset and is usually preceded by a viral infection. Spontaneous remissions are common and relapses are rare. Chronic ITP is typically a disease of young adults, mostly women. The onset is insidious and spontaneous remission is rare. The

clinical course waxes and wanes, but is usually relatively benign. Bleeding manifestations are usually mucocutaneous and mild, such as purpura, epistaxis and gingival bleeding.⁽¹⁾ Haematuria and gastrointestinal bleeding are less common and intracerebral haemorrhage is rare. Life threatening bleeding, requiring transfusions or other interventions, is very unusual unless platelet counts are extremely low or other complicating conditions coexist. The rupture of an ovarian follicle is a very common event in women of the reproductive age group. Every month, at the time of ovulation, the ovum is extruded from the follicle on the surface of the ovary into the peritoneal cavity.^(2,3) Any associated bleeding is unlikely to be significant unless there is an underlying severe haemostatic derangement. We describe here a young woman, who developed massive intraperitoneal haemorrhage traced to a ruptured ovarian follicle and who coincidentally has preexisting chronic ITP.

CASE REPORT

A 24-year-old Filipino woman presented to our hospital with complaints of severe generalised abdominal pain for two days. The pain was constant in nature, did not radiate and was associated with nausea and vomiting. She denied any diarrhoea or fever. There was no history of any unusual food ingestion, drugs or recent travel. Apart from an uncomplicated appendectomy performed four years earlier, her initial account of past medical history was unremarkable. In particular, she did not admit to any chronic illnesses. She came to Singapore eight months earlier to work as a domestic helper. There was no significant family history. On examination, she was noted to be dehydrated and pale. Besides the pallor, there were no other skin manifestations, such as petechiae or ecchymoses, noted. No stigmata of chronic liver disease were present. Her heart rate was 113/min, blood pressure 100/54 mmHg and temperature 37.2°C. The abdomen was noted to be distended, tender, guarded and tense. There was pronounced shifting dullness in keeping with the presence of significant ascites. The liver, spleen

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and kidneys were not palpable and bowel sounds were normal. Digital rectal examination was unremarkable.

The initial investigations showed an abnormal full blood count with a significant bicytopenia. The haemoglobin concentration was 7.5 g/dL (normal range 10.7–14.3 g/dL) and the platelet count was $20 \times 10^9/L$ ($155\text{--}393 \times 10^9/L$). The red blood cells were of normal morphology and size. Her white cell count was raised at $15 \times 10^9/L$ ($3.40\text{--}9.20 \times 10^9/L$), with a predominance of neutrophils. She was transfused, rehydrated and given adequate analgesics. Her pain improved but the abdomen remained distended. In view of the bicytopenia (anaemia and thrombocytopenia), the patient's medical history was re-evaluated. At this point, she recalled that during her hospitalisation for the appendix removal four years earlier in the Philippines, she was informed that she had a low blood cell count, but could not remember the exact nature of the abnormality. She did not require any follow-up after she was discharged from the hospital.

Our further investigations showed a normal peripheral blood film, an adequate reticulocyte response to the anaemia and no evidence of haemolysis. Her haemoglobin level dropped from the post-transfused level and the severe thrombocytopenia persisted. Her coagulation profile showed a mildly-prolonged prothrombin time of 15.3 seconds (12–14.8 seconds) and normal activated partial thromboplastin time of 35.1 seconds (28.4–39.7 seconds). Fibrinogen level was normal at 3.03 g/L (1.88–3.99 g/L) while D-dimer was raised with a value reported to be above 2,000 ng/ml (< 379 ng/ml). Aspiration of the ascites yielded a frankly bloody fluid. Computed tomography (CT) of the abdomen showed a left adnexal cystic structure with heterogeneous internal contents and multiple irregular pelvic masses with omental fat stranding, raising suspicions of a malignant process. At this juncture, we obtained the result of the antinuclear antibody test, which recorded a significant titre of 1:320. A bone marrow aspirate and biopsy were subsequently reported to show reactive features but were otherwise normal. In view of the above findings, diagnosis of immune thrombocytopenic purpura was made and treatment was initiated with prednisolone at 1 mg/kg body weight. She responded favourably and the platelet counts rose rapidly.

In view of the abdominal CT findings suggestive of a pelvic malignancy, a surgical opinion recommended an exploratory laparotomy. At laparotomy, a massive haemoperitoneum was found together with a ruptured ovarian follicle. The ovaries, uterus, liver and intestines

were otherwise normal. There was no evidence of a malignant process. Her postoperative recovery was uneventful. In subsequent outpatient reviews, she remained well. Her haemoglobin level normalised and her platelet counts remained satisfactory with the gradual reduction of the prednisolone dose.

DISCUSSION

Chronic ITP is a commonly acquired bleeding disorder of immune origin. The onset and clinical course can be variable. For the individual patient with ITP, the severity may wax and wane. Mild ITP is typically symptom-free. The moderately-severe ITP patient may also be asymptomatic in the absence of trauma. The usual bleeding manifestations of symptomatic ITP include mucocutaneous haemorrhages such as petechiae, easy bruising, epistaxes and gingival bleeding. Older patients may have more severe manifestations such as gastrointestinal bleeding, menorrhagia and rarely, intracranial haemorrhage. Unusual presentations occur when ITP complicates an otherwise insignificant bleeding event or trauma as highlighted by case reports in the literature.⁽⁴⁻⁸⁾ ITP presenting as a primary cause of massive intra-abdominal haemorrhage, even in the presence of another predisposing factor, is extremely rare. A search of the literature revealed few other case reports of similar associations and only one other case report similar to that of our patient. This described a 14-year-old ITP patient with intra-abdominal haemorrhage following a ruptured ovarian follicle. Unlike our patient, the bleeding in this young girl was less severe and she improved without any surgical intervention.⁽⁸⁾

In retrospect, the intra-abdominal bleeding would have subsided, as the platelet count rose in response to corticosteroid therapy, since the underlying primary event was that of a benign, self-limiting nature, such as a ruptured ovarian follicle. However, we were seriously concerned with the probability of an underlying pelvic malignancy as suggested by the abdominal CT findings. A laparotomy ruled that out. In addition, the surgery also benefited the patient in the removal of free blood and clots in the pelvis and abdomen. As she required prednisolone treatment for some time, the presence of such large volumes of extravasated blood in the abdomen would have put her at a significant risk of developing intra-abdominal abscesses.

In conclusion, we have described a young woman with probable chronic ITP of a mild to moderate severity that most likely had an acute exacerbation coinciding with an ovarian follicle rupture. What would have been an insignificant blood loss following

a physiologically benign event was exacerbated by the coincidental severe thrombocytopenia, resulting in an acute and serious intra-abdominal haemorrhage. We would also like to highlight that diagnostic imaging has its limitations. Fortunately for our patient, the decision to intervene surgically did her no harm and could have reduced her risk of the complication of intra-abdominal sepsis from the large collections of extravasated blood.

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